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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/736,890	12/16/2003	Brian Samuel Beaman	YOR919970349US4	5741

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EXAMINER

HO, HOANG QUAN TRAN

ART UNIT	PAPER NUMBER
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2818

MAIL DATE	DELIVERY MODE
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02/08/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/736,890	Applicant(s) BEAMAN ET AL.	
	Examiner Hoang-Quan Ho	Art Unit 2818	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) 26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25,27-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

Applicant's amendment dated November 21, 2007 is acknowledged. Currently, claims 1 – 31 are pending in light of the amendment, in which claim 26 was amended, no claim was cancelled, no claim was withdrawn, and no claim was added have been entered of record.

Election/Restrictions

Applicant's election without traverse of Invention I, claims 1 – 25 and 27 – 31 in the reply filed on November 21, 2007 is acknowledged.

Claim 26 is withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Invention II, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on November 21, 2007.

The Examiner notes that there was also a Species restriction requirement presented in the restriction requirement made on January 25, 2007. However, the Examiner is withdrawing the Species restriction requirement without prejudice or disclaimer.

Drawings

Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in

compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance. For support, see instant application's specification in U.S. Pat. App. Pub. No. 2004/0148773, at par. 0004 and 0010.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description:

1. Fig. 2: ref. no. 20.
2. Fig. 15: ref. nos. 200 and 202.

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be

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notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the recited limitation of claim 13 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered. Claims 14 – 16 depend from claim 13.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Claims 2 – 31 are objected to because of the following informalities: the preamble in each claim recited are improperly representing antecedent basis, for which those claims depend from claim 1's structure. It is suggested that the preamble for claims 2 – 31 are to reflect proper antecedent basis, such as "The structure according to claim..." Appropriate correction is required.

Claim 9 is objected to because of the following informality: the limitation "a compliant frame structure" has been recited in lines 1 – 2. Thereafter, the limitation is referenced again in line 2, however, is not properly reflecting antecedent basis, such as "wherein said compliant frame structure".

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 18 – 19 and 30 – 31 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 18 – 19 and 30 – 31 recite the limitations of a coating material for the wires. The only support for such materials to coat wires is made known in the instant

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application's specification on pg. 8, lines 1 – 2. Found in app. serial no. 09/088,394, U.S. Pat. No. 6,300,780 at col. 5, line 67 through col. 6, line 4, the materials made known are: Au, Cr, Co, Ni, and Pd. The Examiner could not find any other compelling evidence(s) that the other materials and alloys were disclosed by the Applicant at the time of the invention.

Claims 20 and 22 – 25 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 20 recites wherein said sheet comprises of a material. The only support for such materials is made known in the instant application's specification on pg. 8, lines 1 – 2. Found in app. serial no. 07/963,346, U.S. Pat. No. 5,371,654 at col. 8, lines 20 – 26. The cited disclosure teaches that the substrate is made of such material. However, it does not disclose in such a way that a sheet is made of such material where the sheet "having a plurality of openings therein through which said flying lead wires project", a limitation from claim 8. In other words, the substrate could not be the sheet, since the substrate does not have wires projecting through the substrate. Furthermore, the Examiner observed that claims 10 – 16 suggested that the sheet is spaced apart from the substrate and does not form as a portion of the substrate. Therefore, the Examiner could not find any compelling evidence(s) that the sheet as recited in claim 20 is

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disclosed by the Applicant at the time of the invention. Claims 22 – 25 depend from claim 20.

Assuming *arguendo*, claims 20 and 22 – 25 were proper under 35 U.S.C. § 112, first paragraph, the disclosures of U.S. Pat. No. 5,371,654 and U.S. Pat. No. 5,635,846 may teach the limitations of claims 20 and 22 – 25.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 5 – 25 and 27 – 31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 5 recites the limitation "said flying lead wire structure" in line 3. There is insufficient antecedent basis for this limitation in the claim. The Examiner observes that claim 5 recites the limitation in plural form at line 1. However, after the preamble, the limitation is presented in singular form, without sufficient antecedent basis to refer in singular form. Claims 6 – 25, 29 and 31 depend from claim 5.

Claim 9 recites the limitation "said sheet of materials" in lines 2 – 3. There is insufficient antecedent basis for this limitation in the claim. The Examiner observes that claim 8 recites the limitation in singular form at line 3, from which claim 9 depends from. Claim 9 attempts to introduce the material to be in plural form.

Claim 10 recites the limitation "an electronic component" in line 2. There is confusion of antecedent basis for this limitation in the claim. Claims 1 or 5 have already

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established the limitation "an electronic component". Claim 10 attempts to either reintroduce another electronic component or referring back to the recited structure from claims 1 or 5. The Examiner does not understand Applicant's intention of claim 10.

Claims 13 – 16 depend from claim 10.

Claim 12 recites the limitation "the composite structure" in lines 2 – 3. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 – 4, 8 – 14, 16 – 19, 21, and 27 – 31 are rejected under 35 U.S.C. 102(e) as being anticipated by Beaman et al. (U.S. Pat. No. 5,635,846), hereinafter as Beaman.

Regarding claim 1, figs. 7 – 10 of Beaman teaches a structure comprising angled flying lead wire structures (ref. no. 120) attached to an electronic circuit component (ref. no. 60) comprising:

said flying lead wire structures are bonded to a first surface of said electronic circuit component (as seen in figs. 7 – 10);

said wire structures comprise a desired shape in said flying lead wire (as seen in figs. 7 – 10); and

said flying lead wire having a shear blade cut end (cut by ref. no. 134, as seen in figs. 9 – 10).

Regarding claim 2, Beaman teaches a structure according to claim 1, Beaman teaches further including said flying lead wires comprise a plurality of angles relative to the surface of said electronic circuit component (as seen in figs. 7 – 10, all wires, ref. no. 120, are provide in angles relative to the circuit component).

Regarding claim 3, Beaman teaches a structure according to claim 2, Beaman teaches said flying lead wires comprise a plurality of heights relative to the surface of said electronic circuit component (as seen in figs. 7 – 10, all wires, ref. no. 120, are provide in heights relative to the circuit component).

Regarding claim 4, Beaman teaches a structure according to claim 3, Beaman teaches further including said flying lead wires comprise a shape selected from the group consisting of linear, piece wise linear, continuously curved, and combinations thereof (as seen in figs. 7 – 10).

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Regarding claim 8, Beaman teaches a structure according to anyone of claims 1 or 5, figs. 11 – 13 of Beaman teaches further including said flying lead wire further comprise disposed in a predetermined position a sheet of material (col. 8, lines 9 – 15) having a plurality of openings (col. 8, lines 13 – 15) therein through which said flying lead wires project (col. 8, lines 9 – 15).

Regarding claim 9, Beaman teaches a structure according to claim 8, Beaman teaches further including a compliant frame structure (ref. no. 140), wherein a compliant frame structure is used to support said sheet of materials (as seen in fig. 12 and in view of col. 8, lines 9 – 15).

Regarding claim 10, Beaman teaches a structure according to claim 8, Beaman teaches wherein said sheet is spaced apart from said surface by an electronic component to provide flexible support (col. 8, lines 9 – 15; ref. no. 146).

Regarding claim 11, Beaman teaches a structure according to claim 8, Beaman teaches wherein said sheet is spaced apart from said surface of the electronic component by a rigid support (ref. no. 146), said rigid support serves as a stand-off, or hard stop, to limit the degree of movement of said wire tip end in a direction perpendicular to said surface (as seen in fig. 12).

Regarding claim 12, Beaman teaches a structure according to claim 8, Beaman teaches wherein said sheet is spaced apart from said surface of the electronic component by a support (ref. no. 146) with the composite structure of both a rigid and a compliant layer (col. 6, lines 61 – 64).

Regarding claim 13, Beaman teaches a structure according to claim 10, Beaman teaches wherein a space between said surface of the electronic component and said sheet is filled with a compliant medium (ref. no. 146).

Regarding claim 14, Beaman teaches a structure according to claim 13, Beaman teaches wherein said the compliant medium is an elastomeric material (col. 6, line 61).

Regarding claim 16, Beaman teaches a structure according to claim 10, Beaman teaches wherein said flexible support is selected from the group consisting of a spring and an elastomeric material (ref. no. 146).

Regarding claim 17, Beaman teaches a structure according to claim 8, Beaman teaches wherein said wire tip ends comprise a structure selected from the group consisting of a protuberance, a spherical contact geometry, a straight contact end, a sharp spike, multiple sharp spike, sharp nodules and the combination of the above (as seen in fig. 11).

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Regarding claim 18, Beaman teaches a structure according to claim 8, Beaman teaches wherein said wire end tips are coated with a material selected from the group consisting of Ir, Pd, Pt, Ni, Au, Rh, Ru, Re, Co, Cu, and their alloys (col. 5, line 66 through col. 6, line 3).

Regarding claim 19, Beaman teaches a structure according to claim 8, Beaman teaches wherein said angle flying lead wire is coated with a material selected from the group consisting of Ir, Pd, Pt, Ni, Au, Rh, Ru, Re, Co, Cu, and their alloys (col. 5, line 66 through col. 6, line 3).

Regarding claim 21, Beaman teaches a structure according to claim 8, Beaman teaches wherein said sheet comprises a material selected from the group consisting of a metal, a polymer, a semiconductor and dielectric (col. 3, lines 55 – 63).

Regarding claim 27, Beaman teaches a structure according to claim 1, Beaman teaches wherein said electronic circuit component is a substrate having an electrical conductor pattern (col. 3, lines 55 – 63).

Regarding claim 28, Beaman teaches a structure according to claim 1, Beaman teaches wherein said angled flying lead bond structure further comprise a coating (col. 5, line 66 through col. 6, line 3).

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Regarding claim 29, Beaman teaches a structure according to claim 5, Beaman teaches wherein said flying lead wire structures further comprise a coating (col. 5, line 66 through col. 6, line 3).

Regarding claim 30, Beaman teaches a structure according to claim 28, Beaman teaches wherein said coating is selected from the group consisting of Ir, Pd, Pt, Ni, Au, Rh, Ru, Re, Co, Cu and their alloys (col. 5, line 66 through col. 6, line 3).

Regarding claim 31, Beaman teaches a structure according to claim 29, Beaman teaches wherein said coating is selected from the group consisting of Ir, Pd, Pt, Ni, Au, Rh, Ru, Re, Co, Cu and their alloys (col. 5, line 66 through col. 6, line 3).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 5 – 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beaman.

Regarding claim 5, figs. 7 – 10 of Beaman teaches a structure comprising flying lead wire structures (ref. no. 120) attached to an electronic circuit component (ref. no. 60) comprising:

said flying lead wire structure is bonded to a first surface of said electronic circuit component (as seen in figs. 7 – 10);

said wire structure comprise a desired shape in said flying lead wire (as seen in figs. 7 – 10).

Beaman may not explicitly teach the following limitation whereas it would have been obvious to one of ordinary skill in the art to provide a small nick on opposite sides of said wire. The Examiner observed that as seen in figs. 9 – 10 of Beaman, one of

many wires, ref. no. 120 is cut by a knife edge, ref. no. 134, providing a nick on one side of the wire. However, Beaman does not teach that the cutting is done by two knives to provide a small nick on two sides of the wire. One of ordinary skill in the art would recognize that cutting a wire is well known and established in the art to be accomplished by more than one razor sharp edge. For instance, take into account of an ordinary wire cutter which has two blades to cut a wire (e.g., in a form like a scissor). Having two blades to cut a wire enhances precision of cutting the wire at a specific point and requires less work than a single blade attempting to do the same task. Therefore, implementation of a dual blade wire cutter would have been an obvious matter in light of the aforementioned obviousness.

Regarding claim 6, Beaman teaches a structure according to claim 5, Beaman teaches further including said flying lead wires comprise a plurality of angles relative to the surface of said electronic circuit component (as seen in figs. 7 – 10, all wires, ref. no. 120, are provide in angles relative to the circuit component).

Regarding claim 7, Beaman teaches a structure according to claim 6, Beaman teaches further including said flying lead wires comprise a plurality of heights relative to the surface of said electronic circuit component (as seen in figs. 7 – 10, all wires, ref. no. 120, are provide in heights relative to the circuit component).

Claims 15, 20 and 22 – 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beaman as applied to claims 13 and 8 above respectively, and further in view of Beaman et al. (U.S. Pat. No. 5,371,654), hereinafter as Beaman654.

Regarding claim 15, Beaman teaches a structure according to claim 13, Beaman may not explicitly teach the following limitation whereas Beaman654 teaches it is known in the art to provide wherein said the compliant medium is a foamed polymer material (col. 9, lines 43 – 60). It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the invention of Beaman with the foamed polymer material of Beaman654, in order to improve compliance and reduce the dielectric constant of the elastomer material (col. 9, lines 55 – 57). It is proper to combine Beaman and Beaman654 because they both teach analogous art relating to wire bond fabrication.

Regarding claim 20, Beaman and Beaman654 teaches a structure according to claim 8, Beaman may not explicitly teach the following limitation whereas Beaman654 teaches it would have been obvious to one of ordinary skill in the art to provide wherein said sheet comprises materials selected from the group consisting of Invar laminate, a Cu/Invar/Cu laminate, molybdenum laminate (col. 8, lines 20 – 22). It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the invention of Beaman with the materials of Beaman654, in order to provide a sacrificial substrate to provide support to electronic circuits. It is proper to combine

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Beaman and Beaman654 because they both teach analogous art relating to electronic circuit fabrication.

Regarding claim 22, Beaman and Beaman654 teaches a structure according to claim 20, Beaman teaches wherein said the sheet is overcoated with a polymer layer (col. 3, lines 55 – 63).

Regarding claim 23, Beaman and Beaman654 teaches a structure according to claim 20, Beaman teaches wherein the sheet is overcoated with an insulating layer (col. 3, lines 55 – 63).

Regarding claim 24, Beaman and Beaman654 teaches a structure according to claim 20, Beaman teaches wherein the sheet is overcoated with a thin compliant polymer layer (col. 3, lines 55 – 63).

Regarding claim 25, Beaman teaches a structure according to claim 20, Beaman teaches wherein the sheet is laminated between two insulating layers (col. 3, lines 55 – 63).

Regarding claims 8 – 14, 16 – 19, 21, 29, and 31, as rejected by Beaman under 35 U.S.C. § 102(e), those rejections are also included here under 35 U.S.C. § 103(a).

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Those rejections would not be repeated here since the only difference is under § 103(a) rather than § 102(a) and depend from claim 8.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Fig. 18 of U.S. Pat. No. 5,821,763 is the same as fig. 15 of instant patent application.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoang-Quan Ho whose telephone number is 571-272-8711. The examiner can normally be reached on Monday - Friday, 9 AM - 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Loke can be reached on 571-272-1657. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/HQH/

Hoang-Quan Ho

Assistant Patent Examiner

January 27, 2008

A handwritten signature in cursive script, appearing to read "Andy Hupel".

Andy Hupel
Primary Examiner